

Treatment of Hyperlipidemia in Primary Prevention

- There is a graded relationship between total cholesterol and coronary risk
- Patients with CHD or equivalent clearly benefit from statin
 - MI, angina, coronary revascularization
 - equivalents: symptomatic carotid artery disease, PAD, AAA, CKD with Cr >1.5, other risk factors that confer a CHD risk >20%*, DM**
 - *Major risk factors: cigarette smoking, HTN ≥140/90 or antihypertensive medication, HDL <40, family hx of premature CHD, age (men >45, women >55)
 - **DM can be considered a CHD equivalent in the following cases:
 - Use this calculator: <http://www.dtu.ox.ac.uk/riskengine/> OR:
 - Men over age 40 with type 2 DM and any other CHD risk factor, or over age 50 with or without other CHD risk factors
 - Women over age 45 with type 2 DM and any other CHD risk factor, or over age 55 with or without other CHD risk factors
 - Men or women of any age who have had DM (type 1 or type 2) for more than 20 years if they have another risk factor or more than 25 years without another risk factor
- Multiple studies show benefit from lowering cholesterol with statins in patients without known CHD
 - WOSCOPS – pravastatin reduced number of nonfatal MI and CHD mortality in middle-aged men with LDL >155
 - AFCAPS/TexCAPS- lovastatin reduced incidence of first ACS event in low-risk men and women with LDL near 150 (average LDL for general population)
 - ASCOT-LLA- atorvastatin
 - JUPITER- rosuvastatin reduced first cardiovascular event and all-cause mortality for healthy adult men and women with elevated CRP and LDL<130
 - Expert conclusion: statin therapy for primary prevention over a wide range of baseline LDL levels/lipid profiles is effective, and carries a similar relative risk reduction to statin therapy in secondary prevention
- Treatment for patients without known CHD should be based on global CHD risk
 - Does a reduction in cardiovascular risk of 20-30% outweigh the cost and risk of statin therapy?
- Determine baseline cardiovascular risk with a risk calculator, such as Framingham (.Framingham phrase in Epic). Ask if 20-30% reduction in this risk is significant.
- Statins are preferred: several trials showed inc in noncardiovascular mortality with use of other lipid-lowering agents for primary prevention
- How to use statins by expert opinion:
 - Dose for primary prevention: moderate dose
 - Atorvastatin 20 (covered)
 - Simvastatin, pravastatin, lovastatin 40mg
 - Rosuvastatin 5-10mg
 - Monitoring: recommend to check lipid levels to evaluate for adherence only, not to adjust dose
- ATP III:

Risk category	LDL-cholesterol goal	LDL-cholesterol level at which to initiate therapeutic lifestyle changes	LDL-cholesterol level at which to consider drug therapy
Coronary heart disease (CHD) or CHD risk equivalent (10-year risk >20 percent)*	<100 mg/dL (2.58 mmol/L)	≥100 mg/dL (2.58 mmol/L)	≥130 mg/dL (3.36 mmol/L); drug optional at 100 to 129 mg/dL (2.58 to 3.33 mmol/L)•
2 or more risk factors (10-year risk ≤20 percent)Δ	≤130 mg/dL (3.36 mmol/L)	≥130 mg/dL (3.36 mmol/L)	10-year risk 10 to 20 percent: >130 mg/dL (3.36 mmol/L) 10-year risk <10 percent: ≥160 mg/dL (4.13 mmol/L)
0 to 1 risk factor◊	≤160 mg/dL (4.13 mmol/L)	≥160 mg/dL (4.13 mmol/L)	≥190 mg/dL (4.91 mmol/L); LDL-cholesterol lowering drug optional at 160 to 189 mg/dL (4.13 to 4.88 mmol/L)

- Similar calculation of CHD risk, decides for you when the risk is high enough for the 20-30% risk reduction provided by a statin is worthwhile
- Gives LDL goal to direct dosing, addition of non-statin meds if goal not achieved with statin alone
- Specific populations:
 - Pregnant: contraindicated
 - Young: Minimal data is known about safety of long-term use of statins. Low-risk individuals in 20's and 30's should be counseled on the possibility that harm of decades of use could outweigh the benefit in CHD risk.
 - Old: Consider chronologic and physiologic age, expected life span, concurrent illnesses